

CLAIM AMENDMENTS:

Please amend Claims 29-31, 35-40, as follows:

1. - 28. (Canceled).

29. (Currently Amended) An image processing apparatus comprising:  
a signal inputter, arranged to input an image signal of a frame;  
a detector arranged to detect an image change by comparing the inputted image  
signal with a reference image signal;  
~~a first an image signal~~ storage unit, arranged to store the image signal input by  
said signal inputter; and  
~~a second new reference image signal~~ storage unit, arranged to store the inputted  
image signal, that is compared with the reference image signal by said detector, as a new  
reference image signal on a frame basis when said detector detects the image change, and  
not to store the inputted image signal when said detector detects that there is not an image  
change,  
wherein said detector calculates a pixel value difference between each pair of  
corresponding pixels using the image signal and the reference image signal, determines, if  
a corresponding pixel value difference is larger than a first threshold value, that a pixel  
change has occurred, and determines, if the number of pixels having undergone changes in  
an entire frame is larger than a second threshold value, that a frame change has occurred.

30. (Currently Amended) An image processing apparatus comprising:

a signal inputter, arranged to input an image signal of a frame;

a detector arranged to detect an image change by comparing the inputted image signal with a reference image signal;

~~a first an image signal~~ storage unit, arranged to store the image signal input by said signal inputter; and

a ~~second new reference image signal~~ storage unit, arranged to store the inputted image signal, that is compared with the reference image signal by said detector, as a new reference image signal on a frame basis when said detector detects the image change, and not to store the inputted image signal when said detector detects that there is not an image change,

wherein said detector divides the image signal and the reference image signal into a plurality of blocks, calculates the sum total of pixel value differences between corresponding pixels using the image signal and the reference image signal in units of blocks, determines, if the sum total is larger than a first threshold value, that a corresponding block has undergone a change, and determines, if the number of blocks having undergone changes in an entire frame is larger than a second threshold value, that a frame change has occurred.

31. (Currently Amended) An image processing apparatus comprising:

a signal inputter, arranged to input an image signal of a frame;

a detector arranged to detect an image change by comparing the inputted image signal with a reference image signal;

~~a first an image signal~~ storage unit, arranged to store the image signal input by said signal inputter; and

~~a second new reference image signal~~ storage unit, arranged to store the inputted image signal, that is compared with the reference image signal by said detector, as a new reference image signal on a frame basis when said detector detects the image change, and not to store the inputted image signal when said detector detects that there is not an image change,

wherein said detector divides the image signal and the reference image signal into a plurality of blocks, calculates a pixel value difference between each pair of pixels corresponding to the image signal and the reference image signal, determines, if each pixel value difference is larger than a first threshold value and a corresponding pixel which has undergone changes in a block is larger than a second threshold value, that the block of the corresponding pixel has undergone a change, and determines, if the number of blocks having undergone changes in an entire frame is larger than a third threshold value, that a frame change has occurred.

32. - 34. (Canceled)

35. (Currently Amended) An image processing method comprising:

using an image processing apparatus to perform the steps of:

- inputting an image signal of a frame;
- detecting an image change by comparing the inputted image signal with a reference image signal;
- storing, in a ~~first~~ an image signal storage unit, the inputted image signal; and
- storing, in a ~~second~~ new reference image signal storage unit, the inputted image signal that is compared with the reference image signal in said detecting step, as a new reference image signal on a frame basis when said detector detects the image change, and not storing the inputted image signal when said detecting step detects that there is not an image change,

wherein said updating step includes storing the inputted image signal as the reference image signal on a frame basis when said detecting step detects an image change, and does not store the inputted image signal as the reference image signal when said detecting step detects that there is not an image change, and

wherein said detecting step includes calculating a pixel value difference between each pair of corresponding pixels using the image signal and the reference image signal, determining, if a corresponding pixel value difference is larger than a first threshold value, that a pixel change has occurred, and determining, if the number of pixels having undergone changes in an entire frame is larger than a second threshold value, that a frame change has occurred.

36. (Currently Amended) An image processing method comprising:

using an image processing apparatus to perform the steps of:

inputting an image signal of a frame;

detecting an image change by comparing the inputted image signal with a reference image signal;

storing, in a ~~first~~ an image signal storage unit, the inputted image signal; and

storing, in a ~~second~~ new reference image signal storage unit, the inputted image signal that is compared with the reference image signal in said detecting step, as a new reference image signal on a frame basis when said detector detects the image change, and not storing the inputted image signal when said detecting step detects that there is not an image change,

wherein said updating step includes storing the inputted image signal as the reference image signal on a frame basis when said detecting step detects the image change, and does not store the inputted image signal as the reference image signal when said detecting step detects that there is not an image change, and

wherein said detecting step includes dividing the image signal and the reference image signal into a plurality of blocks, calculating the sum total of pixel value differences between corresponding pixels using the image signal and the reference image signal in units of blocks, determining, if the sum total is larger than a first threshold value, that a corresponding block has undergone a change, and determining, if the number of

blocks having undergone changes in an entire frame is larger than a second threshold value, that a frame change has occurred.

37. (Currently Amended) An image processing method comprising:

using an image processing apparatus to perform the steps of:

inputting an image signal of a frame;

detecting an image change by comparing the inputted image signal with a reference image signal;

storing, in a ~~first~~ an image signal storage unit, the inputted image signal; and

storing, in a ~~second~~ new reference image signal storage unit, the inputted image signal that is compared with the reference image signal in said detecting step, as a new reference image signal on a frame basis when said detector detects the image change, and not storing the inputted image signal when said detecting step detects that there is not an image change,

wherein said updating step includes storing the inputted image signal as the reference image signal on a frame basis when said detecting step detects the image change, and does not store the inputted image signal as the reference image signal when said detecting step detects that there is not an image change, and

wherein said detecting step includes dividing the image signal and the reference image signal into a plurality of blocks, calculating a pixel value difference between each pair of pixels corresponding to the image signal and the reference image

signal, determining, if each pixel value difference is larger than a first threshold value and a corresponding pixel which has undergone changes in a block is larger than a second threshold value, that the block of the corresponding pixel has undergone a change, and determining, if the number of blocks having undergone changes in an entire frame is larger than a third threshold value, that a frame change has occurred.

38. (Currently Amended) A computer program stored in a computer-readable memory, comprising a program for causing a computer to execute an image processing method, the image processing method comprising the steps of:

inputting an image signal of a frame;  
detecting an image change by comparing the inputted image signal with a reference image signal;  
storing, in a ~~first~~ an image signal storage unit, the inputted image signal; and  
storing, in a ~~second~~ new reference image signal storage unit, the inputted image signal that is compared with the reference image signal in said detecting step, as a new reference image signal on a frame basis when said detector detects the image change, and not storing the inputted image signal when said detecting step detects that there is not an image change,

wherein said updating step includes storing the inputted image signal as the reference image signal on a frame basis when said detecting step detects the image change,

and does not store the inputted image signal as the reference image signal when said detecting step detects that there is not an image change, and wherein said detecting step includes calculating a pixel value difference between each pair of corresponding pixels using the image signal and the reference image signal, determining, if a corresponding pixel value difference is larger than a first threshold value, that a pixel change has occurred, and determining, if the number of pixels having undergone changes in an entire frame is larger than a second threshold value, that a frame change has occurred.

39. (Currently Amended) A computer program stored in a computer-readable memory, comprising a program for causing a computer to execute an image processing method, the image processing method comprising the steps of:

inputting an image signal of a frame;  
detecting an image change by comparing the inputted image signal with a reference image signal;  
storing, in a ~~first~~ an image signal storage unit, the inputted image signal; and  
storing, in a ~~second~~ new reference image signal storage unit, the inputted image signal that is compared with the reference image signal in said detecting step, as a new reference image signal on a frame basis when said detector detects the image change, and not storing the inputted image signal when said detecting step detects that there is not an image change,

wherein said updating step includes storing the inputted image signal as the reference image signal on a frame basis when said detecting step detects the image change, and does not store the inputted image signal as the reference image signal when said detecting step detects that there is not an image change, and

wherein said detecting step includes dividing the image signal and the reference image signal into a plurality of blocks, calculating the sum total of pixel value differences between corresponding pixels using the image signal and the reference image signal in units of blocks, determining, if the sum total is larger than a first threshold value, that a corresponding block has undergone a change, and determining, if the number of blocks having undergone changes in an entire frame is larger than a second threshold value, that a frame change has occurred.

40. (Currently Amended) A computer program stored in a computer-readable memory, comprising a program for causing a computer to execute an image processing method, the image processing method comprising the steps of:

inputting an image signal of a frame;

detecting an image change by comparing the inputted image signal with a reference image signal; and

storing, in a ~~first~~ an image signal storage unit, the inputted image signal; and

storing, in a ~~second~~ new reference image signal storage unit, the inputted image signal that is compared with the reference image signal in a detecting step, as a new

reference image signal on a frame basis when said detector detects the image change, and not storing the inputted image signal when said detecting step detects that there is not an image change,

wherein said updating step includes storing the inputted image signal as the reference image signal on a frame basis when said detecting step detects the image change, and does not store the inputted image signal as the reference image signal when said detecting step detects that there is not an image change, and

wherein said detecting step includes dividing the image signal and the reference image signal into a plurality of blocks, calculating a pixel value difference between each pair of pixels corresponding to the image signal and the reference image signal, determining, if each pixel value difference is larger than a first threshold value and a corresponding pixel which has undergone changes in a block is larger than a second threshold value, that the block of the corresponding pixel has undergone a change, and determining, if the number of blocks having undergone changes in an entire frame is larger than a third threshold value, that a frame change has occurred.